

# District Energy Pre-Feasibility Study

City Council Briefing

July 11, 2011

## Background

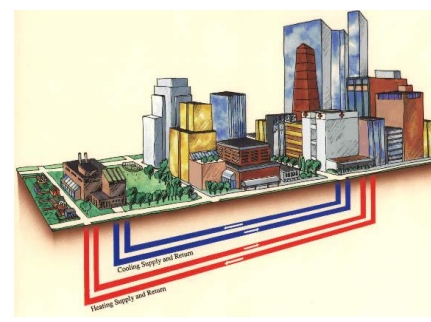
District energy is a key strategy for achieving Seattle's climate protection goals and achieving net zero emissions in 2050. However, without near term intervention, significant cost and technological barriers will limit feasibility of implementation. The City must play an active role in bridging the cost gap for individual developers and guaranteeing load for district energy service providers if we want to gain the potentially much greater, strategic benefits of district energy systems. At the same time, the City must also take an active hand in providing solutions to short term challenges to Seattle Steam's legacy system, particularly on First Hill.

In order to develop a path forward, OSE engaged two consultant teams to assess the potential for district energy in Seattle:

1. AEI Engineering and COWI reviewed ten pre-selected neighborhoods in Seattle to develop a prioritized list of near-, medium-, and long-range opportunities for district energy in Seattle.
2. Trent Berry of Compass Resource Management served as an advisor to the City, identifying policy strategies to facilitate district energy systems in Seattle, and helping OSE evaluate emerging opportunities and existing challenges that could require the City to move more quickly than originally planned. These included Pioneer Square, First Hill, and Interbay.

### What is District Energy?

A district energy system heats a number of buildings through one central energy source, rather than relying on boilers in individual buildings. This centralization allows for substantial increases in system efficiency and enables fuel flexibility and greater options for greener fuels.



## Pre-Feasibility Study

AEI/COWI's technical analysis of thermal supply and demand yielded the following results:

- The highest near-term potential exists in First Hill, Capitol Hill, South Lake Union, and the University of Washington.
- Certain nodes within the Interbay neighborhood may encounter dense development and support a district energy system. However the densities anticipated for the entire neighborhood are not high enough to support an expanded district energy system.

Compass's policy analysis identified numerous challenges or barriers to district energy. They include:

- District energy is a capital-intensive, high-risk business requiring long-term commitments by multiple customers to attract investors.
- There is a general lack of understanding and trust among customers and owners of existing district energy systems and their historical role or future potential.
- Current energy prices, regulations and incentives do not necessarily provide incentives for connection and in some cases create disincentives.

- City standards and other requirements can greatly increase the costs of installing district energy infrastructure in the public right-of-way. The costs of installing distribution piping in Seattle tend to be much higher than other jurisdictions.

### **Report Recommendations**

To address the challenges identified above, Compass has recommended the following actions to the City:

1. Form an Interdepartmental Steering Committee tasked with moving district energy forward in the City.
2. Develop a new strategic community partnership model in the City, initially focused on First Hill with the opportunity to expand to other areas. First Hill represents an important near-term opportunity to work with the redevelopment of Yesler Terrace and three major hospitals.
  - The partnership would be tasked with bringing on a private utility partner to develop, own, finance, and operate district energy infrastructure on First Hill.
  - The private utility partner would be granted a retail franchise for delivery of energy on First Hill, and would create a strategy for developing a district energy system for Yesler Terrace.
  - The model could serve as a stepping stone to bringing district energy to Capitol Hill and other areas in the future.
  - The City would serve on a technical committee to provide strategic oversight, and could play a number of roles to support the utility or incentivize hook-ups. The City would not finance the district energy system.
3. Pursue policy reform in four critical areas:
  - Infrastructure installation costs
  - Green building policies –ensure full credit for district energy, where relevant.
  - State utility policy and incentives –better support cogeneration and remove incentives for electric resistance heat.
4. Lead additional feasibility analysis of Capitol Hill and the University of Washington neighborhoods.

### **Next Steps**

The City recommends focusing its near-term efforts on pursuing the recommendations related to a strategic community partnership and policy reform. OSE currently has \$50,000 of funding reserved for 2011, which is estimated to be sufficient for these activities.